

Kentucky Lock Project Update Inland Waterways Users Board Meeting No. 87

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Kentucky Lock Addition BLUF

- **Bottom Line Up Front**
 - ▶ **Downstream Cofferdam Construction**
 - Construction proceeding well
 - ▶ **Total Project Cost Estimate includes \$184 million in contingency.**
 - ▶ **Downstream Lock Excavation contract (\$25M to \$100M) on track for FY18 award.**
 - Significant flexibility in its funding stream

Kentucky Lock Project Overview

Bridges Superstructures - \$104M
Completed Jul 2014

Bridges Substructures - \$44M
Completed Mar 2006

D/S Lock Excavation
Award – Sept. 2018

U/S Miter Gate Fab. - \$5.6M
Completed Dec 2016

D/S Cofferdam - \$67.1M
Award - Sept. 2016

Upstream Cofferdam - \$17M
Completed Nov 2006

D/S Lock
Award – Sept. 2020

Approach Walls
Award – Sept. 2021

Site, Demolition, &
Utilities - \$4.1M
Award – Jan 2018

Upstream Lock - \$110M
Completed Feb 2017

Contract Legend

Completed

Current

Future

Lock & Associated Facilities	\$1,044M
TVA Transmission Towers	13M
P & L Railroad	97M
Hwy 62 and other roadways	100M
Total	\$1,254M

\$499M Obl thru Sep 2017 = 40% complete

Downstream Cofferdam

Low Bid: \$67.1M

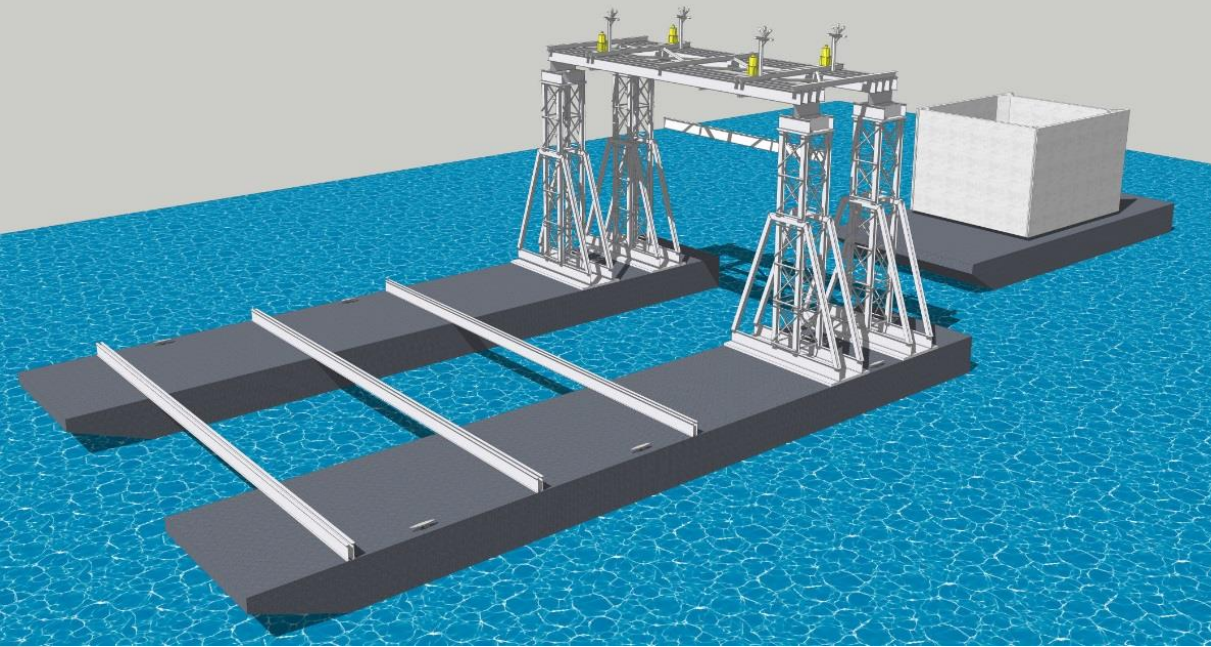
Current amount: \$65.5M

Contractor: Johnson Bros.

Award: September 2016

Complete: December 2019

Downstream
Cofferdam



Lift-in Arrangement 3D Model

6 April 2018 – Gantry barge system being assembled

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6 April 2018- Sheet Pile Cell Template in place.



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1st of 3 lifts completed for first shell.

16 March 2018 –
Photos on casting
barges.

Steel reinforcement
tied for 2nd shell.

Wall armor for
shells in
foreground.



Total Project Cost Estimate

(Certified 3 January 2017, FY18 Price Level)

Feature Code & Description	Spent Cost Thru 10/1/2016 (\$K)	Remaining Cost (\$K)	Contingency Amount (\$K)	Fully Funded Amount (\$K)
02 – Relocations	\$165,955	\$0	\$0	\$165,955
05 – Locks	\$130,704	\$556,920	\$157,828	\$845,452
06 – Fish & Wildlife Facilities	\$107	\$144	\$36	\$286
08 - Roads, Railroads & Bridges	\$0	\$21,189	\$6,569	\$27,758
19 – Buildings, Grounds & Utilities	\$575	\$10,014	\$3,104	\$13,693
01 – Lands and Damages	\$884	\$0	\$0	\$884
30 – Planning, Engineering & Design	\$109,462	\$18,212	\$5,209	\$132,883
31 – Construction Management	\$18,016	\$38,546	\$11,012	\$67,574
Total	\$425,703	\$645,025	\$183,757	\$1,254,485

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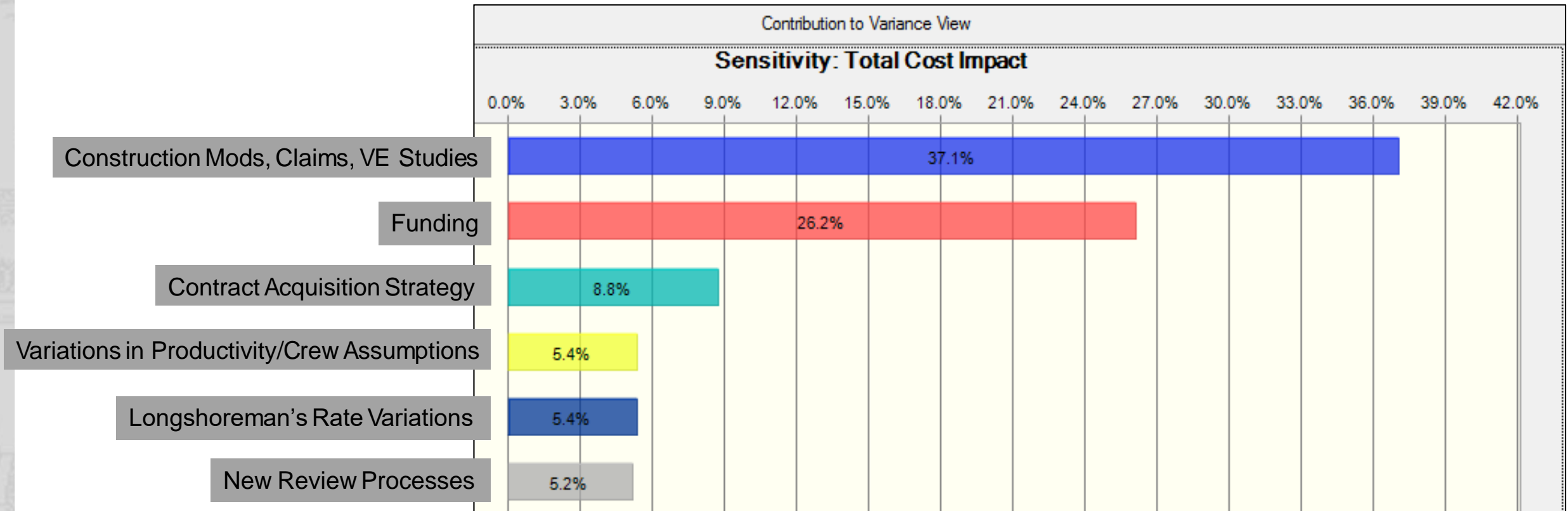
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Total Project Cost Estimate



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File Name



Kentucky Locks & Dam, Tennessee River, KY

	ARRA	CG	IWTF	Total
Total Project Cost:				\$1,254,485,000 ¹
Allocations through FY2014:	\$88,833,626	\$175,955,288	\$141,460,987	\$406,249,901
FY15 Allocation:	\$0	\$7,350,000	\$7,350,000	\$14,700,000
FY16 Allocation:	NA	\$22,850,000	\$22,850,000	\$45,700,000
FY17 Allocation:	NA	\$18,000,000	\$18,000,000	\$36,000,000
FY18 Allocation:	NA	\$0	\$0	\$0
FY19 Budget:	NA	\$0	\$0	\$0
Total Allocations to Date:	\$88,833,626	\$224,155,288	\$189,660,987	\$502,649,901
Remaining Balance:				\$751,835,099
Remaining Balance Change From Last Meeting				\$0

Note: ¹Project cost data is reflective of 03 Jan 17 certified cost at a price level adjustment (OCT 17 \$'s), Fully Funded, 2024 completion

Changes

- **None**

Funding Overview

- **Authorized Cost:** \$796,318,000 (Oct16 \$)
- **902 Limit:** \$819,736,000 (Oct15 \$)
- **ARRA (FY09-13):** \$ 88,833,628
- **Engineering & Design Cost:** \$111,080,000 (Thru FY17)
- **Supervision & Admin Cost:** \$ 19,412,000 (Thru FY17)
- **Mitigation Cost:** TBD;
alternative analysis on hold pending funding

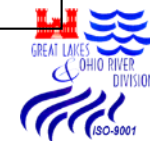
Current Status of the Project

- Downstream Cofferdam construction is **28%** financially complete.
- **Site Demolition Utilities (SDU) contract Notice to Proceed - 5 Mar 2018.**

Next Steps

- Progress Economic Update.
- Award Downstream Lock Excavation contract by 30 September 2018.

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Kentucky Locks & Dam, Tennessee River, KY

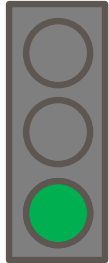
Schedule of Remaining Work	Design Initiated	Contract Award	Construction Complete*	Project Benefits	Capitalized Cost Closeout
Task 1 – HWY / RR Superstructures	01-Oct-99	19-Sep-05	24-May-12		
Task 2 – Upstream Lock Monoliths (all Options)	01-Oct-00	29-Jan-10	30-Dec-16		
Task 3 – Upstream Miter Gate Fabrication	01-Oct-02	30-Sep-13	1-Mar-16		
Task 4 – Downstream Cofferdam	01-Oct-00	30-Sep-16	17-Dec-19		
Task 5 – Site, Demolition, & Utilities	01-Oct-00	31-Jan-18	30-Jan-19		
Task 6 – Downstream Lock Excavation	01-Oct-00	30-Sep-18	30-Mar-20		
Task 7 – Downstream Lock	01-Oct-00	30-Sep-20	12-Mar-24	12-Mar-24**	
Task 8 – Approach Walls	01-Oct-02	30-Sep-21	21-Nov-23		

*Dates are achievable based on the most efficient funding profile.

**Based on 3 Jan 17 Certified cost estimate Cost and Schedule Risk Assessment, the project has an 80% confidence level of being completed by 2028. Three of the four years of this schedule contingency is due to the risk of not receiving efficient funding.

Kentucky Lock Project

Time and Cost Scorecard



Expenditures

31 Mar

Planned (BCWS)	\$455.4M
Earned (BCWP)	\$455.1M
Actual (ACWP)	\$451.2M

BCWP: Reports the value (based on % complete) of the work performed to date.

Target:

Actual as compared to Planned: (<1% = Green) (>1% and <3% = Yellow) and (>3% = Red)

Schedule

31 Mar

(Baseline)/(Current)

Project Complete	May 2028 / Jul 2024
Lock Operational	May 2028 / Jul 2024

Measures: Planned project completion and Lock operational dates

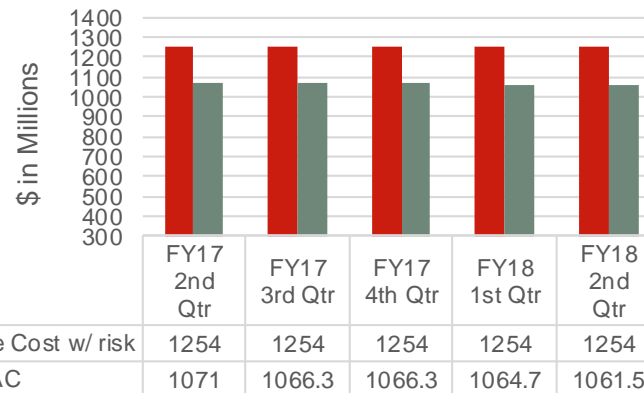
Target:

PACR Anticipated in FY19.



Budget

KY Lock Project EAC Trend



Major Activity Schedule

Activity	Baseline	Current
Level 3 Economic Update – Draft Report	14 Nov 2017	30 Sep 2018
Site, Demolition, & Utilities – Award Contract	Sep 2017	Jan 2018(A)
PACR to HQ	Feb 2018	Dec 2019
Downstream Lock Excavation Award Contract	Sep 2018	Sep 2018

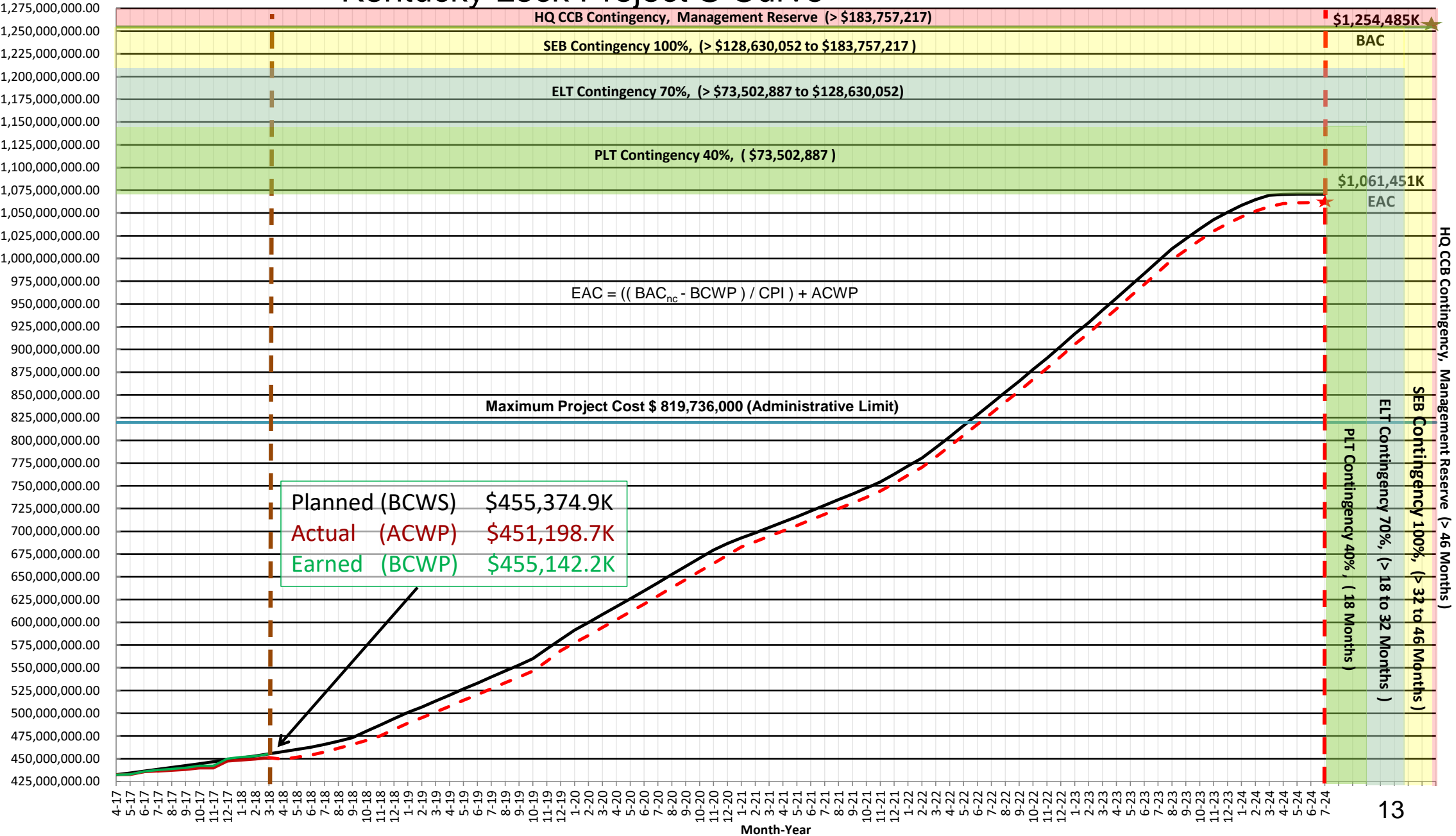
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Kentucky Lock Project S Curve



Kentucky Lock Project Schedule

Major Feature Construction	Award	Complete ²	Revised
Upstream Lock Monoliths Construction	Jan 2010	Feb 2017	Complete
Downstream Cofferdam Construction	Sep 2016	Nov 2019	Dec 2019
Site, Demolition & Utilities	Jan 2018(A)	Jan 2019	
Downstream Lock Excavation Construction	Sep 2018	Dec 2020	
Downstream Lock Construction	Sep 2020	Mar 2024	
Approach Walls Construction	Sep 2021	Nov 2023	
Risk Based Total Project Cost Estimate	Mar 2016	3 Jan 2017	Complete
Economic Update	Jan 2017	Sep 2018	
Post Authorization Change Report for 902 Exceedance ¹	Jul 2017	Dec 2018	

¹902 Exceedance expected as early as FY2022

²New schedule associated with new cost estimate. Assumes no risk. 80% confidence schedule adds 46 months to project completion date)

Kentucky Lock

Summary and Challenges

- Downstream Cofferdam construction going well but it is a high risk contract due to constricted marine area and geology.
- Recent years average delays at KY Lock >7 hours and traffic levels remain robust. This should bode well for benefits in ongoing Economic Update.
- Downstream Lock Excavation is on track and will be configured to maximize funding flexibility.